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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/713,779

11/14/2003

Roland Casar

MB 377

8783

7590

10/03/2006

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EXAMINER

FRANTZ, JESSICA L

ART UNIT

PAPER NUMBER

3746

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/713,779

Applicant(s)

CASAR ET AL.

Examiner

Jessica L. Frantz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/1805, 11/14/03.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statements (IDS) submitted on 10/18/2005, 11/14/2003 is acknowledged. The references listed therein have been considered.

Drawings

2. The drawings are objected to because on page 6 line 3 of the specification, "short pins 8' " are introduced but fail to appear on the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: on page 7, line 27, there is an unclosed parenthesis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 and 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitation "geometric center" of the sliding element. However, the definition of "geometric center" is unclear. For the purpose of examination, it has been understood that each sliding element has a particular radius of curvature and the origin of that radius is the "geometric center" of the sliding element. In regards to claim 2, it is unclear how it is possible to locate a position both on the piston axis and in front of the piston axis.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, and 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn et al. (6,164,252) in view of Terauchi (4,664,604). Kuhn et al. teaches the invention substantially as claimed including a reciprocating-piston machine comprising:

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a rotatable machine shaft (5), a plurality of pistons (2) movably supported by piston guides (3) and having piston axes which extend parallel to, and are arranged all at the same distance from, the machine shaft and in circumferentially spaced relationship, on a cylinder envelope (not labeled) around the machine shaft (Abstract), an annular pivoting disc (6) extending around the machine shaft and being connected to said machine shaft so as to be driven thereby, each of the pistons being engaged with the pivoting disc by a joint arrangement (11, 12, 13), said joint arrangement including an at least partially spherical receptacle (10) with at least one bearing element (11, 12) arranged in said receptacle moveably relative to an associated piston and relative to said pivoting disc, a first sliding element (12) having a first sliding face (see figure 1, outer circumference of 12) in the form of a spherical segment, with a first geometric center (not labeled), and a second sliding element (11) having a second sliding face (see figure 1, outer circumference of 11) in the form of a spherical segment, with a second geometric center (not labeled). However, Kuhn et al. fails to teach the first and second geometric centers are arranged at a distance from one another. And further fails teach that they are located on opposite sides of a center plane of the pivoting disk or that one of the geometric centers is offset in the direction of rotation of the shaft relative to the other geometric center. Terauchi, as disclosed in figure 1, teaches two spherical segments (29) where their geometric centers (not labeled, but as discussed above are taken to be the origin of the radius of curvature of each segment) are arranged at a distance from one another and further teach that they are located on opposite sides of a center plane of the pivoting disk (24) and that one of the geometric

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centers is offset in the direction of rotation (not labeled) of the shaft (15) relative to the their geometric center for the purpose of sliding along the side surface of the pivoting disk. (Column 4, lines 34-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the invention of Kuhn et al. with the arrangement of sliding segments of Terauchi for the purpose of enhancing sliding along the side surface of the pivoting disk. (Column 4, lines 34-37).

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn et al. (6,164,252) in view of Murakami et al. (5,477,773). Kuhn et al. is discussed above but fails to teach the first and second geometric centers are arranged at a distance from one another and that the joint arrangement has a center of force transmission which is located approximately on said cylinder envelope defined by said piston axes and is positioned in front of the associated piston axis with respect to the direction of rotation of the pivoting disc. Murakami et al. teaches that the first and second geometric centers (Q1, Q2) are arranged at a distance from one another (Column 3, lines 28-31) (again, discussed above as taken to be the origin of the radius of curvature of each segment, see figure 1) for the purpose of allowing the displacement of the piston (6) to accurately reflect the displacement of the cam surfaces (7a, 7b) on the displacement curve (F) and that the joint arrangement (8, 9, 7a, 7b) has a center of force transmission (not labeled) which is located approximately on said cylinder envelope (Co) defined by said piston axes (L1) and is positioned in front of the associated piston axis with respect to the direction of rotation of the pivoting disc as shown clearly in Figure 2 and thereby allowing minimized vibration. Therefore, it would have been obvious to one of ordinary

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skill in the art at the time of the invention to have provided the invention of Kuhn et al. with the invention of Murakami et al. including the location of the sliding members' geometric centers spaced apart from one another for the purpose of allowing the displacement of the piston to accurately reflect the displacement of the cam surfaces on the displacement curve (Column 3, lines 28-31) and also the joint arrangements center of force transmission being located approximately on the cylinder envelope to allow minimized vibration.

Allowable Subject Matter

9. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following reference teach the invention substantially as claimed:

- Kimura et al. (5,228,841)
- Tanaka et al. (6,435,074)
- Kaku et al. (4,662,267)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica L. Frantz whose telephone number is 571-272-

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5822. The examiner can normally be reached on Monday through Friday 8:30a.m.-5:00p.m. E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on (571)272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JF

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ANTHONY D. STASHICK
PRIMARY EXAMINER